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Implementation of the Secondary 2 Program of Project P.A.T.H.S.: observations based on the co-walker scheme

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Abstract

The present study examined the implementation quality of the Tier 1 Program of Project P.A.T.H.S. (Positive Adolescent Training through Holistic Social Programmes) at Secondary 2 level in the third year of the initial phase of the project in Hong Kong. Classroom observations of 222 units in 148 schools were conducted under the co-walker scheme. Results generally showed that the overall level of program adherence was high and different dimensions of program delivery were positively correlated amongst themselves. Instructors' use of positive and supportive feedback, degree of achievement of the objectives, and lesson preparation significantly predicted both the overall implementation quality and perceived success of the program. While instructors' interactive delivery method and their familiarity with the students predicted overall implementation quality, student participation and involvement, and opportunity for reflection were predictive of implementation success. In conjunction with other evaluation findings, the present study lends further support to the high implementation quality of Project P.A.T.H.S. in Hong Kong.

Keywords: Chinese adolescents; observation; positive youth development; process evaluation; program implementation quality; Project P.A.T.H.S.

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Introduction

How to promote positive youth development and to prevent adolescent developmental problems has always been an important topic for professionals working with young people. In recent years, a paradigm shift in prevention science focuses more on the holistic development of youth than single problem behaviors. As a result, numerous positive youth development programs have been developed across the world, with the majority of the programs in Western countries. In contrast, few high-quality prevention/intervention and health promotion programs for youth are designed and implemented in different Chinese communities (1–4), despite the intensification of adolescent developmental problems (5). Against this background, Shek and colleagues from five universities in Hong Kong developed Project P.A.T.H.S. (Positive Adolescent Training through Holistic Social Programmes) to promote positive development among Hong Kong adolescents, which is financially supported by The Hong Kong Jockey Club Charities Trust. As one of the most large-scale positive youth development programs in Asia (6), Project P.A.T.H.S. has been implemented in more than 200 secondary schools in Hong Kong.

Project P.A.T.H.S. consists of two tiers of programs. While the Tier 2 Program takes a selective prevention approach designed for students having greater psychological needs, the Tier 1 Program is similar to a universal prevention strategy, targeting all students joining the program regardless of their risk status. Through the use of a structured curriculum-based approach, students learned psychosocial competencies with reference to 15 positive youth development constructs (7): bonding, resilience, social competence, emotional competence, cognitive competence, behavioral competence, moral competence, self-determination, spirituality, self-efficacy, clear and positive identity, beliefs in the future, recognition for positive behavior, prosocial involvement, and prosocial norms. In view of the diverse needs of students of different ages, different program units are specifically designed for each grade in the junior secondary years (8). To evaluate the effectiveness of Project P.A.T.H.S., various evaluation strategies have been used, such as focus groups interviews (9), students' weekly diary analysis (10), case studies (11), subjective and objective outcome evaluation (12, 13), and different forms of process evaluation (14, 15). The evaluative findings consistently showed that the project is effective in fostering positive youth development, and that both program participants and program implementers hold positive views toward the project (13, 16, 17).

While it is important to assess the program outcomes in program evaluation, understanding the implementation process is also crucial (18). As highlighted by Johnson et al. (19), process evaluation "can provide information that not only

helps identify and resolve problems while the program is ongoing but also can offer better understanding about how the program was implemented, help explain program outcomes, help engender alternatives to program design, and provide a foundation for program maintenance, dissemination and generalization" (p. 14). As such, process evaluation contributes to a better understanding of how a program would be successful or unsuccessful and provides insights for program improvement. Actually, such an evaluative component has been incorporated in the evaluation of Project P.A.T.H.S. In addition to interim evaluation and process evaluation by researchers, one method adopted to understand the implementation process of the project is the systematic observation of the program through the "co-walker scheme".

The "co-walker scheme" was first introduced in Project P.A.T.H.S. in the 2006/07 school year with two main purposes. The first aim was to provide support for the program implementers and facilitate communication between the research team and the participating school. In the scheme, each participating school is assigned a registered social worker called a "co-walker". The assigned co-walker visits the school regularly, discusses with the instructors any problems or difficulties they are encountering in the program implementation process, and gives advice as necessary. The instructors, in turn, are encouraged to share their personal experiences on program implementation with the co-walkers and make suggestions and recommendations to improve the program. The co-walker also keeps in contact with the school coordinator(s) via e-mails, telephone calls or mail so to give advice and support.

The second purpose of the co-walker scheme is to understand the implementation process of the Tier 1 Program. During co-walkers' school visits, they observed program delivery in the classroom and evaluated the implementation quality on different aspects based on a standardized questionnaire. First, basic information about the observed class was noted, including the grade of the class, number of students and instructors, gender of the instructor(s), date of observation, duration of class period, and how the program is integrated with the school's formal or informal curriculum. Second, program fidelity and adherence were observed through comparing the real class activities with the designed curriculum manual. Program adherence and fidelity, defined as the match between a program as it was intended to be delivered and the program as it is actually delivered in reality or the extent to which a program is implemented according to the original program design, are considered the key variables of quality implementation (20). Previous studies have found that high program fidelity can ensure that the integrity of program components are delivered to the participants as originally designed. In addition, as the implementer might not know which components of the program are core components or contribute to the desired results, higher adherence to the program normally results in better outcomes (21). Third, quality of program delivery was examined in terms of 13 aspects, including student interest, student participation and involvement, classroom control, use of interactive delivery method, use of strategies to enhance student motivation, use of positive and supportive feedback, instructors' familiarity with the students, opportunity for reflection, degree of achievement of the objectives, time management, quality of preparation, overall implementation quality, and perceived success of implementation. These factors have also been shown to be key ingredients of effective programs and contribute to favorable program outcomes (11, 22–24) and are therefore included in the observation protocol.

Based on the co-walker's observation, the research team and program planners are able to comprehend the project's implementation in real classroom settings, to identify factors that may lead to the success or failure of program implementation, and to make suggestions for the improvement of the program. Specifically, there are several unique merits of the process evaluation by co-walkers. As the co-walker constantly visits schools and makes contact with the instructors, they become familiar with the instructor and the class, which enables them to be more circumspective in their observation. This provides more prolonged engagement in the evaluation process. In addition, co-walker evaluation allows more precise and detailed information of program implementation. The co-walker observation provides opportunity to assess certain classroom behaviors and techniques in program delivery that may contribute to the program's effectiveness, such as the degree of student participation and teacher's use of interactive delivery method. Compared to the self-report data by instructors, which may be biased and involve over-reporting of positive outcome or under-reporting of negative outcome, the co-walkers serve as a neutral third party providing reliable and detailed information on program implementation. Furthermore, as co-walkers are not involved in the data analysis process, the objectivity of the results can be enhanced.

The present study has three objectives. First, this study attempted to evaluate the implementation quality of the Tier 1 Program for Secondary 2 students in the 2008/09 school year based on systematic observation conducted via the co-walker scheme. Secondly, intercorrelations among different aspects of program delivery were investigated. Although previous studies have identified various factors of program delivery that affect program success, the question of how these factors are correlated with each other are not thoroughly examined. Based on the literature (25–27), it was predicted that different aspects of program delivery would be positively correlated. The third purpose is to explore important program delivery variables that directly contribute to the overall implementation quality and program success.

Methods

In the 2008/09 school year, a total of 216 schools participated in Project P.A.T.H.S., among which 198 schools (91.67%) were visited by the co-walkers. Specifically, 198 schools participated in the Secondary 2 Program, with 89 schools adopting the full program (i.e., 20-h program involving 40 units) and 109 schools adopting the core program (i.e., 10-h program involving 20 units). Because of difficulties in arrangement and staff issues in the schools, systematic evaluation based on the co-walker's observation was conducted in 148 schools (i.e., co-walkers visited some schools without systematic observations of the lessons). Table 1 shows the basic information of the observed schools.

Table 1 Basic information about observed schools.

Information	Hours of training		
	10-h	20-h	Total
Total number of schools observed	67	81	148
Total number of units observed	96	126	222
Number of units observed per school	1–3	1–3	1–3
Average number of students per observation	36.57	36.58	36.58
Average number of instructors per observation	2.07	1.82	1.93
Average duration of observation, min	37.73	32.94	35.01

Instruments

An observation form that consists of four major areas was designed for the co-walkers to record how each teaching unit was implemented in the classroom. The first part consists of basic information about the class, including the name of school, grade of the observed class, number of students and instructors, gender of the instructor(s), date of observation, and duration of class period. The second part includes information on the program's integration with the school formal curriculum, which is, whether the program is integrated into or outside the formal curriculum, and which subject the program is integrated into if it is within formal curriculum. The third part of the form consists of information on program fidelity and adherence. The observers were required to compare the class activities with the curriculum manual and note down any modifications made to the activities, rate the degree of adherence of each activity and the unit as a whole, and record the time used to implement the unit.

The fourth part of the rating form consists of the Curriculum Delivery Assessment Scale which is used to measure the quality of program delivery. On a seven-point Likert scale, there are 13 items assessing the areas of student interest, student participation and involvement, classroom control, use of interactive delivery method, use of strategies to enhance student motivation, use of positive and supportive feedback, instructors' familiarity with the students, opportunity for reflection, degree of achievement of the objectives, time management, quality of preparation, overall implementation quality, and success of implementation. A low score on the Likert scale indicates little or no achievement on the item, and a high score on the scale indicates that the item is well achieved. To obtain an overall picture, ratings for each item across all units were averaged. Lastly, the rating form also includes three open-ended questions for the observers to fill in additional information, including their feelings towards the lesson, other feelings or observations, and comments made by the instructors. Previous studies based on the co-walker scheme suggest that this scale possesses acceptable psychometric properties.

Procedures

Informed consent from both school principal and the instructors (i.e., teachers and social workers) was obtained before the class observation took place. The objectives of the co-walker scheme were repeatedly emphasized. Each teaching unit was observed by one co-walker, with all co-walkers being registered social workers. Before conducting the observation, the observers were trained to standardize the data collection procedure and rating of classroom observation, to ensure the quality and consistency of the data collected. During the observation, each co-walker observed how the units were implemented and completed the observation form described above. The observation data were analyzed by trained researchers after all data collection finished.

Results

As shown in Table 1, systematic observations of one to three teaching units in schools that adopted either the core program or the full program were conducted. A total of 222 units were observed, which covered 14 positive youth development constructs, including bonding, social competence, emotional competence, cognitive competence, behavioral competence, moral competence, self-efficacy, prosocial norms, resilience, self-determination, spirituality, clear and positive identity, beliefs in the future, and prosocial involvement. The average duration of observation was 35.01 min per observation. The average numbers of students and instructors per class were 36.58 and 1.93, respectively.

Table 2 summarizes the modes of implementation for the units observed. Most of the observed programs were incorporated into the school's formal curriculum (62.2%), including Life Education, Civic Education, Liberal Studies, Integrated Humanities, Moral Education, Social Studies,

Table 2 Percentage of observed Tier 1 Program (Secondary 2) units implemented in different modes for schools adopting 10 and 20 h of implementation.

Different modes	Hours of implementation		
	10-h	20-h	Total
Incorporated into the formal curriculum	49 (51.0%)	89 (70.6%)	138 (62.2%)
Outside formal curriculum	47 (49.0%)	34 (27.0%)	81 (36.5%)
Incorporated into formal curriculum and outside formal curriculum	0 (0%)	3 (2.4%)	3 (1.4%)
Total	96 (100%)	126 (100%)	222 (100%)

Personal Growth and Religious Studies. About one-third of the observed units were implemented outside the formal curriculum (36.5%), such as after-school hours, holidays, teachers' periods, post-examination days, and assemblies or camps.

The present paper focuses on the quantitative data based on the Curriculum Delivery Assessment Scale. Reliability analysis (Table 3) indicates that the 13-item Curriculum Delivery Assessment Scale was highly reliable (Cronbach's α=0.92; mean inter-item correlations=0.49). As shown in Table 3, means of item scores ranged from 4.50 to 5.32, indicating that observers' ratings on different curriculum delivery aspects were generally high, particularly on instructors' lesson preparation (M=5.32) and time management (M=5.00). The averaged overall adherence to the curriculum manuals across observed units was 75.62%. However, the degree of adherence of one observed unit was rated to be very low (i.e., 5%). An examination of the observer's written comment indicated that the low degree of adherence was because of the instructor's unfamiliarity with students. The observer remarked that "The session was conducted for all classes of Secondary 2. The instructors had not yet built a rapport with the students. She spent a lot of time on students' grouping, explaining activities and classroom control. The process of the session was slow, and so some students felt bored. Students could not finish the assigned activities, and the instructor could neither help students to improve their cooperation skills nor reflect on themselves."

While modifications of the teaching units were also observed, the observers generally regarded the changes to be reasonable and facilitating better content delivery. This is reflected in the observers' positive comments on instructors' modification of activities. For example, one observer noted that "Instructor led the students to initiate a role-playing game based on the topic 'friendly criticism', allowing all students to participate and try to give inappropriate criticisms, and students were deeply affected. As the topic is simple, role-playing became students' biggest enjoyment, and could bring about introspection in the students."

Pearson's correlation analyses showed that all 13 items of curriculum delivery were positively correlated (Table 4). The correlation coefficient between the overall implementation quality (item 12) and perceived success of implementation (item 13) was the highest ($r=0.81$, $p<0.01$). Regarding other specific aspects of curriculum delivery, instructors' use of positive and supportive feedbacks and the degree of achievement of the objectives were highly correlated with overall implementation quality ($r=0.65$, $p<0.01$; $r=0.69$, $p<0.01$, respectively) and success of implementation ($r=0.66$, $p<0.01$; $r=0.79$, $p<0.01$, respectively).

To examine how different aspects of program delivery may contribute to the overall implementation quality and the success of implementation, multiple regression analyses were performed, with the two variables as outcome variables and other aspects of curriculum delivery serving as the predictors. As shown in Table 5, the overall implementation quality was significantly predicted by interactive delivery method ($\beta=0.18$, $p<0.01$), use of positive and supportive feedback ($\beta=0.12$, $p<0.05$), instructors' familiarity with the students ($\beta=0.10$, $p<0.05$), degree of achievement of the objectives ($\beta=0.18$, $p<0.01$), and lesson preparation ($\beta=0.16$, $p<0.01$). The model explained for 70% of the variance in overall implementation quality [$F(11, 220)=44.38$, $p<0.01$]. Similarly, success of implementation was significantly predicted by student participation and involvement ($\beta=0.17$, $p<0.01$), use of positive and supportive feedback ($\beta=0.15$, $p<0.01$), opportunity for reflection ($\beta=0.16$, $p<0.01$), degree of achievement of the objectives ($\beta=0.42$, $p<0.01$) and lesson preparation ($\beta=0.11$, $p<0.05$). The model explained for 75% of the variance in implementation success [$F(11, 220)=56.08$, $p<0.01$].

Discussion

The purposes of the present study were to examine the quality of implementation of the Tier 1 Program in the 2008/09 academic year through the co-walker scheme, to investigate

Table 3 Cronbach's α coefficients, means and standard deviations (SD) of the Curriculum Delivery Assessment Scale, and average adherence rate.

Quality of curriculum delivery	Corrected item-total correlation	Mean	SD
Student interest	0.63	4.99	0.87
Student participation and involvement	0.71	4.97	0.84
Classroom control	0.64	4.98	0.95
Interactive delivery method	0.66	4.73	0.86
Strategies to enhance student motivation	0.62	4.71	0.82
Use of positive and supportive feedback	0.73	4.78	0.88
Instructors' familiarity with the students	0.62	4.73	1.29
Opportunity for reflection	0.72	4.77	0.93
Degree of achievement of the objectives	0.78	4.91	0.80
Time management	0.43	5.00	0.91
Lesson preparation	0.52	5.32	0.85
Overall implementation quality	0.84	4.80	0.86
Success of implementation	0.84	4.87	0.84

Cronbach's α=0.92, average adherence=75.62%.

Table 4 Inter-correlations among items of the Curriculum Delivery Assessment Scale.

Item	1	2	3	4	5	6	7	8	9	10	11	12	13
Student interest	1.00												
Student participation and involvement	0.71[a]	1.00											
Classroom control	0.45[a]	0.58[a]	1.00										
Interactive delivery method	0.46[a]	0.54[a]	0.41[a]	1.00									
Strategies to enhance student motivation	0.40[a]	0.54[a]	0.43[a]	0.46[a]	1.00								
Use of positive and supportive feedback	0.52[a]	0.59[a]	0.60[a]	0.51[a]	0.57[a]	1.00							
Instructors' familiarity with the students	0.46[a]	0.43[a]	0.42[a]	0.44[a]	0.31[a]	0.46[a]	1.00						
Opportunity for reflection	0.46[a]	0.40[a]	0.44[a]	0.53[a]	0.52[a]	0.56[a]	0.60[a]	1.00					
Degree of achievement of the objectives	0.54[a]	0.60[a]	0.52[a]	0.53[a]	0.49[a]	0.58[a]	0.54[a]	0.64[a]	1.00				
Time management	0.18[a]	0.25[a]	0.38[a]	0.28[a]	0.24[a]	0.29[a]	0.38[a]	0.33[a]	0.44[a]	1.00			
Lesson preparation	0.31[a]	0.33[a]	0.29[a]	0.41[a]	0.44[a]	0.41[a]	0.34[a]	0.48[a]	0.38[a]	0.27[a]	1.00		
Overall implementation quality	0.54[a]	0.62[a]	0.58[a]	0.64[a]	0.57[a]	0.65[a]	0.56[a]	0.63[a]	0.69[a]	0.42[a]	0.53[a]	1.00	
Success of implementation	0.56[a]	0.65[a]	0.56[a]	0.60[a]	0.53[a]	0.66[a]	0.54[a]	0.67[a]	0.79[a]	0.38[a]	0.48[a]	0.81[a]	1.00

[a]$p<0.01$.

the relationships among different aspects of program delivery, and to explore the predictors of overall implementation quality and implementation success of the program. Results showed that the implementation quality of the Tier 1 Program was generally high in terms of different aspects of program delivery. As predicted, various factors of program delivery were positively correlated. Several important factors that contribute to the overall implementation quality and implementation success of the program were also identified.

Different aspects of program delivery were evaluated positively by the observers. In particular, lesson preparation, time management, student interest and classroom control were the four items with the highest ratings. The co-walkers also perceived that the objectives of the implemented units were achieved, and that the implementation was of good quality and successful. Generally speaking, the present findings indicate that the participants enjoyed the program, and the instructors could deliver the program as intended with adequate instructional strategies. Amongst all, instructors' lesson preparation received the highest rating, which may be attributed to the 20-h training workshop for instructors provided by the project training team before program implementation. The 3-day training workshop helped implementers to familiarize themselves with the project, introduced to instructors the philosophy of the project, models and concepts on adolescent development, curriculum units of each positive youth development construct and theories that underlie the construct, and taught them skills of classroom management such as understanding the basic needs of students and the appropriate use of rules and power in the classroom (28). Such training provides program implementers an overall picture of the program and the framework of curriculum contents, which allows program implementers to acquire effective program delivery skills and to prepare teaching materials more effectively.

In this study, the overall degree of adherence to the program manuals assessed by the co-walkers was 75.62%, suggesting a satisfactory level of implementation fidelity. While instructors made some modifications to the program, most of them were considered appropriate by observers. However, compared to previous observations, the degree of overall program adherence in the 2008/09 academic year seemed to decrease. For example, the degree of overall program adherence was 84.6%–89.3% in the 2007/08 academic school year (25, 26). This means that in this year instructors made more changes or adaptations to the program as they implemented the curriculum. There are several possible explanations. First, program implementers failed to prepare the program sufficiently before the class. Given that the item "lesson preparation" received the highest ratings among all program delivery aspects from the co-walkers, this possibility

Table 5 Summary of the multiple regression analyses.

Overall implementation quality		Success of implementation	
Significant predictors	Standardized β	Significant predictors	Standardized β
Interactive delivery method	0.18[a]	Student participation and involvement	0.17[a]
Use of positive and supportive feedback	0.12[b]	Use of positive and supportive feedback	0.15[a]
Instructors' familiarity with the students	0.10[b]	Opportunity for reflection	0.16[a]
Degree of achievement of the objectives	0.18[a]	Degree of achievement of the objectives	0.42[a]
Lesson preparation	0.16[a]	Lesson preparation	0.11[b]
	R^2=0.70		R^2=0.75
	F (11, 210)=44.38[a]		F (11, 210)=56.08[a]

[a]$p<0.01$, [b]$p<0.05$.

is unlikely to be true. Second, program implementers were unfamiliar with the students and therefore spent too much time building relationships with students and maintaining the rules of the classroom. This may be true for some exceptional cases (such as the case described earlier), but is definitely not true for most teachers. In the observers' evaluation, the mean score of "instructors' familiarity with students" was 4.73 on a seven-point Likert scale, indicating that instructors were generally familiar with their students. Nonetheless, this factor should be further considered in future program implementation. The third explanation is that instructors intentionally adapted the program to the local settings. In the third year of implementation of the program in the participated school, instructors have obtained growing familiarity with the curriculum content and better knowledge about the students' preferences on different activities in the program. Based on these understandings, the instructors may make relevant modification to better attract students' attention and to increase their interest. As noted previously, observers rated the modifications as facilitating, and the objectives of the program could be achieved. In fact, the high ratings of overall program implementation quality and program success in this study suggest that moderate adaptation of the standardized program did not adversely affect the program outcomes. Future research will determine whether specific adaptation would be beneficial or harmful to program impact.

As predicted, all 13 aspects of curriculum delivery were positively correlated, which means that different program delivery factors were closely related to each other and may interactively contribute to program success. In particular, overall implementation quality was highly correlated with the success of implementation, suggesting a tight link between the implementation process and program success. Degree of objectives achievement was significantly correlated with overall implementation quality and implementation success. While the achievement of program objectives means successful delivery of program message to the audience as planned and high adherence to the original program (20), the present findings support the necessity of program adherence in the implementation process. Similar to previous evaluation findings (17, 27), use of positive feedback by instructors was also significantly correlated with the overall implementation quality and implementation success, suggesting that quality instructional strategies continued to be a key factor for high-quality program implementation. As noted by previous researchers, a program delivered in a structured and organized manner with logical and clear language promotes favorable program outcomes (23). Multiple instructional strategies in program delivery (e.g., proactive classroom management, cooperative learning methods, and strategies to enhance student motivation) are significant facilitators of program success (24). Overall, results showed that there are positive correlations among different aspects of curriculum delivery.

Three major factors of program delivery were identified as significant predictors of both overall implementation quality and program success, including: lesson preparation, use of positive and supportive feedback, and degree of achievement of the objectives. First, instructors' preparation for the lesson allows smooth program delivery and adherence to unit goals. Program implementers who are familiar with program content may prepare extra teaching materials that may facilitate program delivery in class. Their knowledge of the unit goals and the importance of program fidelity might lead them to be more cautious in avoiding deviation from the central message of the unit. Second, by providing positive and supportive feedback, instructors create opportunity for students to participate and increase students' learning interest and motivation (29). Also, as instructors who provide positive and supportive feedback might be perceived by the students as more friendly and responsive, the positive relationship between students and instructors might increase students' willingness to involve and participate in the program. Furthermore, interactive delivery method and instructors' familiarity with the students were also found to contribute to the overall implementation quality. Similar to the use of positive and supportive feedback, the use of interactive delivery method encourages students' participation and learning. According to Kember and Gow (30), "deep learning", or the concentration of underlying meaning of the material, occurs usually because of an intrinsic interest in the material. They found that the adoption of interactive teaching method increases students' keenness and enthusiasm in the material, and is most likely to encourage deep learning in students. In addition, instructors' familiarity with the students is also important in motivating students' involvement. Frequently noted by co-walkers in their observations, instructors who had good knowledge of the students (e.g., their names and characters) could make adequate changes to lesson plans to accommodate students' needs. Since rapport was built between instructor and the students, students might be less reserved and could express themselves more openly, promoting a positive learning atmosphere in class. As suggested in the findings, it is important for program implementers to create a positive environment in the classroom to foster students' interest and involvement, and more importantly, allow room for students to reflect on what they learned and thus enhance their personal growth. This confirms a key feature mentioned earlier that a well-trained instructor and skillful instructional techniques are critical to a program's success. The above variables contribute positively to the project's implementation quality and success. The findings are also aligned with the objectives of the 20-h training workshop that aims to familiarize implementers with curriculum units and to cultivate a positive attitude towards adolescent development (28).

While the present process evaluation study provides useful information regarding the implementation quality of the Tier 1 Program in the 2008/09 academic year and identified important factors that contributed to the quality and success of the program, there were several limitations in the study. First, the sample of observed schools was not randomly selected, and the findings might not be truly representative of the participant schools. Nevertheless, as the observation was based on a large sample (74.75% of all participating schools), this possibility is not likely to happen. Second, because each lesson was observed by one observer only, it is possible that

the observations might be affected by subjective evaluation of the co-walkers. However, as all co-walkers had received systematic training before observation is carried out, the possible bias may not be large. Third, because of the cross-sectional nature of the present study, no casual relationship between specific variables and program implementation quality and success can be firmly established. Further observation could be conducted in each school at different time-points to collect longitudinal data for testing the predictive contributions of program fidelity and curriculum delivery to program success. Despite the above limitations, the present findings provide support to the high implementation quality of the Tier 1 Program of Project P.A.T.H.S. for Secondary 2 school students in Hong Kong. In conjunction with other studies (2, 31–36), the present study underscores the positive evaluation findings arising for Project P.A.T.H.S. in Hong Kong.

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References

1. Shek DTL. Tackling adolescent substance abuse in Hong Kong: where we should go and should not go. ScientificWorldJ 2007;7:2021–30.
2. Shek DTL, Yu L. Prevention of adolescent problem behavior: longitudinal impact of the Project P.A.T.H.S. in Hong Kong. ScientificWorldJ 2011;11:546–67.
3. Anthony EK, Alter CF, Jenson JM. Development of a risk and resilience-based out-of-school time program for children and youths. Soc Work 2009;54:45–55.
4. Catalano RF, Mazza JJ, Harachi TW, Abbott RD, Haggerty KP, et al. Raising healthy children through enhancing social development in elementary school: results after 1.5 years. J Sch Psychol 2003;41:143–64.
5. Yu DL, Seligman ME. Preventing depressive symptoms in Chinese children. Prev Treat 2003;5:1–39.
6. Shek DTL, Yu L. A review of validated youth prevention and positive youth development programmes in Asia. Int J Adolesc Med Health 2011;23:317–24.
7. Shek DTL. Conceptual framework underlying the development of a positive youth development program in Hong Kong. Int J Adolesc Med Health 2006;18:303–14.
8. Shek DTL, Ma HK, Sun RCF, Lee TY, Siu AMH, et al., editors. P.A.T.H.S. to adulthood: a Jockey Club Youth Enhancement Scheme. Secondary Two Curriculum (Full Implementation Phase): users' manual and activity handbook 1. Hong Kong: Social Welfare Practice and Research Centre, Department of Social Work, The Chinese University of Hong Kong, 2008.
9. Shek DTL, Lee TY, Siu A, Lam CM. Qualitative evaluation of the Project P.A.T.H.S. based on the perceptions of the program participants. ScientificWorldJ 2006;6:2254–63.
10. Shek DTL, Sun RCF, Lam CM, Lung DWM, Lo SC. Evaluation of Project P.A.T.H.S. in Hong Kong: utilization of student weekly diary. ScientificWorldJ 2008;8:13–21.
11. Lam CM. Key successful features of Tier 1 Program of the Project P.A.T.H.S.: a case study of a school admitting students with low academic achievement. Int J Child Adolesc Health 2009;2:487–96.
12. Shek DTL. Effectiveness of the Tier 1 Program of Project P.A.T.H.S.: findings based on the first 2 years of program implementation. ScientificWorldJ 2009;9:539–47.
13. Shek DTL. Objective outcome evaluation of the Project P.A.T.H.S. in Hong Kong: findings based on individual growth curve models. ScientificWorldJ 2010;10:182–91.
14. Shek DTL, Sun RCF, Tang CYP. Experimental implementation of the Secondary 3 Program of Project P.A.T.H.S.: observations based on the co-walker scheme. ScientificWorldJ 2009;9:1003–11.
15. Shek DTL, Sun RCF. Implementation of the Tier 1 Program of the Project P.A.T.H.S.: interim evaluation findings. ScientificWorldJ 2006;1:310–20.
16. Shek DTL, Ng CSM. Qualitative evaluation of the Project P.A.T.H.S.: findings based on focus groups with student participants. ScientificWorldJ 2009;9:691–703.
17. Shek DTL, Ng CSM. Subjective outcome evaluation of the Project P.A.T.H.S. (Secondary 2 Program): views of the program participants. ScientificWorldJ 2009;9:1012–22.
18. Shek DTL, Ma HK, Sun RCF, Lung DWM. Process evaluation of the Tier 1 Program (Secondary 1 Curriculum) of the Project P.A.T.H.S.: findings based on the Full Implementation Phase. ScientificWorldJ 2008;8:35–46.
19. Johnson CC, Lai YL, Rice J, Rose D, Webber LS. ACTION Live: using process evaluation to describe implementation of a worksite wellness program. J Occup Environ Med 2010;52 (Suppl. 1):14–21.
20. Fagan SF, Mihalic AA, Argamaso S. Implementing the Life Skills Training drug prevention program: factors related to implementation fidelity. Implement Sci 2008;3:1–16.
21. Fagan AA, Hanson K, Hawkins JD, Arthur MW. Bridging science to practice: achieving prevention program implementation fidelity in the Community Youth Development Study. Am J Commun Psychol 2008;41:235–49.
22. Lam CM. What makes a good program? A case study of a school admitting high academic achievers. Int J Child Adolesc Health 2009;2:477–86.
23. Brophy J. Research linking teacher behavior to student achievement: potential implications for instruction of chapter 1 students. Educ Psychol 1988;23:235–86.
24. Karachi TW, Abbott RD, Catalano RF, Haggerty KP, Fleming CB. Opening the black box: using process evaluation measures to assess implementation and theory building. Am J Commun Psychol 1999;27:711–31.
25. Shek DTL, Sun RCF. Process evaluation of the Secondary 2 Curriculum of the Project P.A.T.H.S.: findings based on the Full Implementation Phase. Int Public Health J 2009;1: 301–10.
26. Shek DTL, Tam SY. Process evaluation of the Project P.A.T.H.S. (Secondary 2 Program): findings based on the co-walker scheme. Adolescence 2009;44:813–25.
27. Shek DTL, Sun RCF. Implementation of a positive development program in a Chinese context: the role of policy, program, people, process, and place. ScientificWorldJ 2008;8:960–96.
28. Lam CM, Shek DTL. Training for program implementers of Project P.A.T.H.S. in Hong Kong: Secondary 2 Training Program. Int J Adolesc Med Health 2010;22:385–99.
29. Davis BG. Tools for teaching. Jossey-Bass Publishers: San Francisco, 1993.
30. Kember D, Gow L. Orientations to teaching and their effect on the quality of student learning. J High Educ 1994;65:58–74.

31. Shek DTL. Using students' weekly diaries to evaluate positive youth development programs: are findings based on multiple studies consistent? Soc Indic Res 2010;95:475–87.
32. Shek DTL, Ng CSM. Early identification of adolescents with greater psychosocial needs: an evaluation of the Project P.A.T.H.S. in Hong Kong. Int J Dis Hum Dev 2010;9:291–9.
33. Shek DTL, Ng CSM, Tsui PF. Qualitative evaluation of the Project P.A.T.H.S.: findings based on focus groups. Int J Dis Hum Dev 2010;9:307–13.
34. Shek DTL, Sun RCF. Secondary data analyses of subjective outcome evaluation findings of the Project P.A.T.H.S. in Hong Kong. ScientificWorldJ 2010;10:2101–11.
35. Shek DTL, Yu L, Ho VYT. Subjective outcome evaluation of a positive youth development program targeting students with greater psychosocial needs. Int J Dis Hum Dev 2011;10:241–8.
36. Shek DTL, Ma CMS. Impact of the Project P.A.T.H.S. in the junior secondary school years: individual growth curve analyses. ScientificWorldJ 2011;11:253–66.